

## Data Validation Checklist Semivolatile Organic Analyses

Project: 35<sup>TH</sup> Avenue Superfund Site  
 Laboratory: TestAmerica – Savannah, GA  
 Method: SW-846 8270D Low-Level (PAH)  
 Matrix: Soil  
 Reviewer: Karen M Trujillo, URS Group, Inc.  
 Concurrence<sup>1</sup>: Martha Meyers-Lee, URS Group, Inc.

Project No: 60430028; 1  
 Job ID.: 680-109515-3  
 Associated Samples: Refer to **Attachment A** (Sample Summary)  
 Samples Collected: 01/27/2015 and 01/28/2015  
 Date: 10/27/2015  
 Date: 11/05/2015

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
1. Were sample storage and preservation requirements met? If temperature >6°C, then J/UJ flag results.	✓				
2. Were all COC records signed and integrity seals intact, indicating that COC was maintained for all samples?	✓				
3. Were there any problems noted in laboratory data package concerning condition of samples upon receipt?		✓			
4. Do any soil samples contain more than 50% water? If yes, then results are to be reported on a wet-weight basis.		✓			
5. Were holding times met (≤7 and 14 days from collection to extraction for aqueous and solid samples, respectively; ≤40 days from extraction to analysis)? If not, then J/UJ flag sample results. If grossly (2x) exceeded, then flag J/R.	✓				
6. Were results for all project-specified target analytes reported?	✓				
7. Were project-specified Reporting Limits achieved for undiluted sample analyses?	✓				
8. Were samples with analyte concentrations exceeding the calibration range of the instrument re-analyzed at a higher dilution? If not, then J flag sample result.	✓				
9. Was a method blank extracted with each batch (i.e., one per 20 samples, per batch, per matrix and per level)?	✓				
10. Were target analytes detected in the method blank?		✓			
11. Are equipment/rinsate blanks associated with every sample? If no, note in DV report.		✓		According to the QAPP, a rinsate blank is to be collected after each decontamination event, which occurs once per week per the client. A rinsate blank is not associated with this sampling event. Blank contamination will be evaluated based on method blank results.	

<sup>1</sup> Independent technical reviewer

## Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
12. Were target analytes detected in equipment/rinsate blanks?			✓		
13. Were analytes detected in samples below the blank contamination action level? If yes, U flag positive sample results <5x associated blank concentration (10x for common blank contaminants—phthalates)			✓	Blank contamination does not exist.	
14. Is a field duplicate associated with this Job?	✓			<ul style="list-style-type: none"> <li>HP0332A-CSD6" (680-109515-56), which was analyzed and reported under Job ID 680-109515-4, is a field duplicate of HP0332A-CS6" (680-109515-36)</li> <li>CV0312A-CSD6" (680-109515-57), which was analyzed and reported under Job ID 680-109515-4, is a field duplicate of 680-109515-48 (CV0312A-CS6")</li> </ul>	
15. Was precision deemed acceptable as defined by the project plans?		✓		Refer to <b>Attachment B</b> (Field Duplicate Evaluation)	J
16. Were DFTPP ion abundance criteria (i.e., Table 3 of SW-846 8270D) met? If no, professional judgment may be applied to determine to what extent the data may be utilized.	✓			Alternate tuning criteria were used by the laboratory (i.e., EPA Method 525.2). All ion abundance criteria were met per EPA Method 525.2.	
17. Were samples analyzed within 12 hours of the DFTPP tune? If no, professional judgment may be applied to determine to what extent the data may be utilized.	✓				
18. Were initial and continuing calibration standards analyzed at the proper frequency for each instrument? <ul style="list-style-type: none"> <li>Ensure that a minimum of five standards are used for the initial calibration. If no, use professional judgment to determine the effect on the data and note in the reviewer narrative.</li> <li>An initial calibration is to be associated with each sample analysis.</li> <li>A continuing calibration standard is to be analyzed for every 12 hours of sample analysis per instrument.</li> </ul>	✓			<ul style="list-style-type: none"> <li>Instrument ID: CMSK</li> <li>Initial Calibration: 02/04/2015</li> <li>ICV: 02/04/15 @ 11:59</li> <li>CCV: 02/07/15 @ 10:20 and 02/10/15 @ 10:05</li> <li>Instrument ID: CMSY</li> <li>Initial Calibration: 02/03/2015</li> <li>ICV: 02/03/15 @ 19:20</li> <li>CCV: 02/06/15 @ 16:31 and 02/07/15 @ 13:04</li> </ul>	
19. Were calibration results within laboratory/project specifications? <ul style="list-style-type: none"> <li>ICAL (Criteria: <math>\leq 20</math> mean %RSD (<math>\leq 50\%</math> for poor performers), OR <math>r \geq 0.995</math>, OR <math>r^2 \geq 0.99</math>, and RRF <math>\geq 0.050</math> (<math>\geq 0.010</math> for poor performers)):               <ul style="list-style-type: none"> <li>If %RSD &gt; 20 (&gt;50% for poor performers), or <math>r &lt; 0.995</math>, or <math>r^2 &lt; 0.995</math>, then J flag positive results and UJ flag non-detects</li> <li>If mean RRF &lt; 0.050 (&lt;0.010 for poor performers), then J flag positive results and R flag non-detects (unless the lab analyzed a detectability check standard)</li> </ul> </li> <li>ICV and CCV (ICV Criteria: <math>\leq \pm 30\% D</math>; CCV Criteria: <math>\leq \pm 20\% D</math> (<math>\leq 50\%</math> for poor performers) and RF <math>\geq 0.050</math> (<math>\geq 0.010</math> for poor performers)):               <ul style="list-style-type: none"> <li>If %D &gt; Control Limit (&gt;50% for poor performers), then J</li> </ul> </li> </ul>		✓		CCV: 02/07/15 @ 13:04 (CCVIS 680-370012/2), instrument CMSY: Indeno[1,2,3-cd]pyrene @ -24.9 %D (Lab/Project: $\leq 20$ ). Negative bias. J and UJ-Flag all positive and non-detect Indeno[1,2,3-cd]pyrene results in associated samples <sup>2</sup> .	J/UJ

<sup>2</sup> Associated samples: 680-109515-36 through -39, -41 through -43, -46, and -47

## Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
flag positive results and UJ flag non-detects ○ If RF <0.050 (<0.010 for poor performers), then UJ flag non-detected semivolatile target compounds					
20. Was a LCS prepared for each batch and matrix?	✓				
21. Were LCS recoveries within lab control limits? If no, J flag positive results when %R >Upper Control Limit (UCL) and J/R flag results when %R <Lower Control Limit (LCL).		✓		LCS 680-369327/22-A: 2-Methylnaphthalene @ 41%R (42-130%R). J Flag positive and R flag ND results in the associated samples <sup>3</sup> .	J/R
22. Were LCS/LCSD RPD within lab specifications? If no, J flag positive results and UJ flag non-detects			✓	LCS only	
23. Was a MS/MSD pair extracted at the proper frequency (one per 20 samples per batch)?	✓				
24. Is the MS/MSD parent sample a project-specific sample?	✓	✓		<ul style="list-style-type: none"> <li>Batch 369327: 680-109515-44 (CV0503B-CS6”), MS/MSD</li> <li>Batch 369210: (Batch Sample), MS/MSD. Lab sample 680-109515-15 is a project-specific sample (CV0627B-GS6”) and results were reported under Job ID 680-109515-2.</li> </ul>	
25. For all analytes with native sample concentrations < 4 x spiking level, were MS and MSD recoveries within laboratory/project specifications? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> <li>If the native sample concentration &gt; 4x spiking level, then an evaluation of interference is not possible.</li> <li>If either MS or MSD recovery meets control limits, qualification of data is not warranted.</li> <li>MS and MSD %R&lt;10: J and R Flag positive and ND results, respectively</li> <li>MS and MSD %R &gt;10 and &lt;LCL: J Flag positive and UJ flag non-detect results</li> <li>MS and MSD R% &gt;UCL (or 140): J Flag positive results</li> </ul>		✓		CV0503B-CS6” (680-109515-44): <ul style="list-style-type: none"> <li>Anthracene MS and MSD @41 and 53 %R (42-146). Qualification of data not required<sup>4</sup></li> <li>Benzo[a]anthracene @-45 and 74 %R (39-157). Qualification of data not required<sup>4</sup></li> <li>Benzo[a]pyrene MS and MSD @-95 and 60 %R (41-158). Qualification of data not required<sup>4</sup></li> <li>Benzo[g,h,i]perylene @-106 and 4 %R (32-150). J Flag sample result.</li> <li>Benzo[k]fluoranthene MS and MSD @-43 and 108 %R (38-148). Qualification of data not required<sup>4</sup></li> <li>Chrysene @-68 and 71 %R (38-147). Qualification of data not required<sup>4</sup></li> <li>Dibenz(a,h)anthracene MS and MSD @-17 and 35 %R (32-155). Qualification of data not required<sup>4</sup></li> <li>Fluoranthene MS and MSD @0.8 and 86 %R (36-147). Qualification of data not required<sup>4</sup></li> <li>Indeno [1,2,3-cd]pyrene @-79 and 18 %R (35-148). J Flag sample result.</li> <li>1-Methylnaphthalene MS and MSD @33 and 47 %R (36-130). Qualification of data not required<sup>4</sup></li> <li>2-Methylnaphthalene MS and MSD @33 and 47 %R (42-130). Qualification of data not required<sup>4</sup></li> <li>Naphthalene MS and MSD @31 and 44 %R (33-130).</li> </ul>	J

<sup>3</sup> Associated samples: 680-109515-36 through -48<sup>4</sup> The recovery of either the MS or MSD met control limits.

## Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
				Qualification of data not required <sup>4</sup> <ul style="list-style-type: none"> <li>Phenanthrene MS and MSD @33 and 53 %R (40-135). Qualification of data not required<sup>4</sup></li> <li>Pyrene MS and MSD @-24 and 71 %R (38-145). Qualification of data not required<sup>4</sup></li> </ul>	
26. For all analytes with native sample concentrations < 4 x spiking level, were laboratory criteria met for precision during the MS and MSD analyses? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> <li>If the native sample concentration &gt; 4x spiking level, then an evaluation of interference is not possible.</li> <li>If %RPD &gt; UCL, J flag positive result and UJ flag non-detect result</li> </ul>		✓		CV0503B-CS6" (680-109515-44): Benzo[k]fluoranthene @ 62 %RPD (≤50). J Flag	J
27. Were surrogate recoveries within lab/project specifications? <ul style="list-style-type: none"> <li>If %R for 1 Acid or BN surrogates &lt;10, then J flag positive and R flag non-detect associated sample results (i.e., acid or BN results)</li> <li>If 2 or more Acid or BN %R &gt;UCL, then J flag positive associated sample results (i.e., acid or BN results)</li> <li>If 2 or more Acid or BN %R ≥10%, but &lt;LCL, then J flag positive and UJ flag non-detect associated sample results (i.e., acid or BN results)</li> <li>If 2 or more Acid or BN , with 1 %R &gt;UCL and 1 %R ≥10%, but &lt;LCL, then J flag positive and UJ flag non-detect associated sample results (i.e., acid or BN results)</li> </ul>		✓		Surrogate o-terphenyl was not recovered (0%) during the diluted analysis of samples 680-109515-40, 44, and -48. Qualification of sample results is not warranted, as the surrogate compound was diluted out of the samples.	
28. Were internal standard (IS) results within lab/project specifications? <ul style="list-style-type: none"> <li>If IS area counts are less than 50% of the midpoint calibration standard, then J flag positive and UJ flag non-detect associated sample results</li> <li>If IS area counts are greater than 100% of the midpoint calibration standard, then J flag positive results</li> <li>If extremely low area counts are reported or performance exhibits a major abrupt drop-off, then a severe loss of sensitivity is indicated, J flag positive and R flag non-detect results</li> <li>If retention time of sample's internal standard is not within 30 seconds of the associated calibration standard, R flag associated data.</li> <li>The chromatographic profile for that sample must be examined to determine if any false positives or negatives exists. For shifts of large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction. Positive results need not be qualified as R, if mass spectral criteria are met.</li> </ul>	✓				

**Data Validation Checklist (Continued)**

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
29. Were lab comments included in report?	✓			Refer to <b>Attachment C</b> (Case Narrative)	
<b>Comments:</b> The data validation was conducted in accordance with the <i>Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1</i> (OTIE, October 2012). The data review process was modeled after the <i>USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Methods Data Review</i> (EPA, October 1999) and <i>USEPA CLP NFG for Low Concentration Organic Methods Data Review</i> (EPA, June 2001). Sample results have been qualified based on the results of the data review process ( <b>Attachment D</b> ). Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment.					

**DV Flag Definitions:**

- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R The sample results are unusable. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the associated level; blank contamination may exist.
- UJ The analyte was not detected above the limit, and the limit is approximate and may be inaccurate or imprecise.

**Acronyms:**

- % Percent
- %D Percent difference
- %R Percent recovery
- %RSD Percent relative standard deviation
- °C Degrees Celsius
- BN Base/Neutral
- CCV Continuing calibration verification
- CLP Contract laboratory program
- DFTPP Decafluorotriphenylphosphine
- DV Data validation
- EPA Environmental Protection Agency
- ICAL Initial calibration
- ICV Initial calibration verification
- IS Internal standard
- LCL Lower control limit
- LCS Laboratory control sample
- LCSD Laboratory control sample duplicate
- MS Matrix spike
- MSD Matrix spike duplicate
- NFG National Functional Guidelines
- PAH Polynuclear aromatic hydrocarbons
- QAPP Quality Assurance Project Plan
- QC Quality control
- RF Response factor
- RPD Relative percent difference
- RRF Relative response factor
- SW-846 *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA. Available: <http://www3.epa.gov/epawaste/hazard/testmethods/index.htm> [November 5, 2015]
- UCL Upper control limit

**ATTACHMENT A**  
**SAMPLE SUMMARY**

## SAMPLE SUMMARY

Client: Oneida Total Integrated Enterprises LLC

Job Number: 680-109515-3

Sdg Number: 680-109515-03

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-109515-35	HP0320J-GS24"	Solid	01/27/2015 1425	01/31/2015 0852
680-109515-36	HP0332A-CS6"	Solid	01/28/2015 0900	01/31/2015 0852
680-109515-37	HP0332A-CS12"	Solid	01/28/2015 0905	01/31/2015 0852
680-109515-38	HP0332A-CS18"	Solid	01/28/2015 0910	01/31/2015 0852
680-109515-39	HP0332A-CS24"	Solid	01/28/2015 0915	01/31/2015 0852
680-109515-40	CV0503A-CS6"	Solid	01/28/2015 1015	01/31/2015 0852
680-109515-41	CV0503A-CS12"	Solid	01/28/2015 1020	01/31/2015 0852
680-109515-42	CV0503A-CS18"	Solid	01/28/2015 1025	01/31/2015 0852
680-109515-43	CV0503A-CS24"	Solid	01/28/2015 1030	01/31/2015 0852
680-109515-44	CV0503B-CS6"	Solid	01/28/2015 1050	01/31/2015 0852
680-109515-44MS	CV0503B-CS6"	Solid	01/28/2015 1050	01/31/2015 0852
680-109515-44MSD	CV0503B-CS6"	Solid	01/28/2015 1050	01/31/2015 0852
680-109515-45	CV0503B-CS12"	Solid	01/28/2015 1055	01/31/2015 0852
680-109515-46	CV0503B-CS18"	Solid	01/28/2015 1100	01/31/2015 0852
680-109515-47	CV0503B-CS24"	Solid	01/28/2015 1105	01/31/2015 0852
680-109515-48	CV0312A-CS6"	Solid	01/28/2015 1330	01/31/2015 0852

**ATTACHMENT B**  
**FIELD DUPLICATE EVALUATION**



# Evaluation of Field Duplicate Results

# Attachment B

Analyte	680-109515-36 HP0332A-CS6"	RL	680-109515-56 HP0332A-CSD6"	RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
1-Methylnaphthalene	33	8.1	24	8.1	µg/kg	40.5	NA	9	16.2	None, absolute difference ≤ 2x Avg RL
2-Methylnaphthalene	38 *	8.1	28 *	8.1	µg/kg	40.5	NA	10	16.2	None, absolute difference ≤ 2x Avg RL
Acenaphthene	U	8.1	4.3 J	8.1	µg/kg	40.5	NA	4.3	16.2	None, absolute difference ≤ 2x Avg RL
Acenaphthylene	12	8.1	9.5	8.1	µg/kg	40.5	NA	2.5	16.2	None, absolute difference ≤ 2x Avg RL
Anthracene	23	8.1	17	8.1	µg/kg	40.5	NA	6	16.2	None, absolute difference ≤ 2x Avg RL
Benzo(a)anthracene	160	8.1	140	8.1	µg/kg	40.5	13	NA	NA	None, RPD ≤ 50%
Benzo(a)pyrene	170	8.1	150	8.1	µg/kg	40.5	13	NA	NA	None, RPD ≤ 50%
Benzo(b)fluoranthene	340	8.1	290	8.1	µg/kg	40.5	16	NA	NA	None, RPD ≤ 50%
Benzo(g,h,i)perylene	99	8.1	61	8.1	µg/kg	40.5	48	NA	NA	None, RPD ≤ 50%
Benzo(k)fluoranthene	92	8.1	110	8.1	µg/kg	40.5	18	NA	NA	None, RPD ≤ 50%
Chrysene	270	8.1	210	8.1	µg/kg	40.5	25	NA	NA	None, RPD ≤ 50%
Dibenzo(a,h)anthracene	45	8.1	26	8.1	µg/kg	40.5	NA	19	16.2	J/UJ-flag, absolute difference > 2x Avg RL
Fluoranthene	200	8.1	150	8.1	µg/kg	40.5	29	NA	NA	None, RPD ≤ 50%
Fluorene	U	8.1	4.7 J	8.1	µg/kg	40.5	NA	4.7	16.2	None, absolute difference ≤ 2x Avg RL
Indeno(1,2,3-cd)pyrene	83	8.1	53	8.1	µg/kg	40.5	44	NA	NA	None, RPD ≤ 50%
Naphthalene	41	8.1	29	8.1	µg/kg	40.5	NA	12	16.2	None, absolute difference ≤ 2x Avg RL
Phenanthrene	130	8.1	79	8.1	µg/kg	40.5	49	NA	NA	None, RPD ≤ 50%
Pyrene	250	8.1	210	8.1	µg/kg	40.5	17	NA	NA	None, RPD ≤ 50%

Note: If the analyte was not detected, then the cell was left blank.

\* - LCS or LCSD exceeds the control limits

µg/kg - Micrograms per kilogram

J - Estimated value

NA - Not applicable

RL - Reporting limit

RPD - Relative percent difference

U - Not detected

UJ - Not detected and the limit is estimated

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

# Evaluation of Field Duplicate Results

# Attachment B

Analyte	680-109515-48 CV0312A-CS6"	RL	680-109515-57 CV0312A-CSD6"	RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
1-Methylnaphthalene	100	77	110	81	µg/kg	395	NA	10	158	None, absolute difference ≤ 2x Avg RL
2-Methylnaphthalene	140 *	77	150 *	81	µg/kg	395	NA	10	158	None, absolute difference ≤ 2x Avg RL
Acenaphthene	U	77	54 J	81	µg/kg	395	NA	54	158	None, absolute difference ≤ 2x Avg RL
Anthracene	110	77	190	81	µg/kg	395	NA	80	158	None, absolute difference ≤ 2x Avg RL
Benzo(a)anthracene	630	77	980	81	µg/kg	395	43	NA	NA	None, RPD ≤ 50%
Benzo(a)pyrene	560	77	900	81	µg/kg	395	47	NA	NA	None, RPD ≤ 50%
Benzo(b)fluoranthene	1100	77	1500	81	µg/kg	395	31	NA	NA	None, RPD ≤ 50%
Benzo(g,h,i)perylene	410	77	620	81	µg/kg	395	41	NA	NA	None, RPD ≤ 50%
Benzo(k)fluoranthene	400	77	570	81	µg/kg	395	35	NA	NA	None, RPD ≤ 50%
Chrysene	800	77	1200	81	µg/kg	395	40	NA	NA	None, RPD ≤ 50%
Dibenzo(a,h)anthracene	140	77	220	81	µg/kg	395	NA	80	158	None, absolute difference ≤ 2x Avg RL
Fluoranthene	1200	77	2100	81	µg/kg	395	55	NA	NA	J/UJ-flag, RPD > 50%
Fluorene	U	77	64 J	81	µg/kg	395	NA	64	158	None, absolute difference ≤ 2x Avg RL
Indeno(1,2,3-cd)pyrene	320	77	530	81	µg/kg	395	NA	210	158	J/UJ-flag, absolute difference > 2x Avg RL
Naphthalene	89	77	110	81	µg/kg	395	NA	21	158	None, absolute difference ≤ 2x Avg RL
Phenanthrene	560	77	1000	81	µg/kg	395	56	NA	NA	J/UJ-flag, RPD > 50%
Pyrene	1000	77	1600	81	µg/kg	395	46	NA	NA	None, RPD ≤ 50%

Note: If the analyte was not detected, then the cell was left blank.

\* - LCS or LCSD exceeds the control limits

µg/kg - Micrograms per kilogram

J - Estimated value

NA - Not applicable

RL - Reporting limit

RPD - Relative percent difference

U - Not detected

UJ - Not detected and the limit is estimated

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

**ATTACHMENT C**  
**CASE NARRATIVE**

**CASE NARRATIVE**  
**Client: Oneida Total Integrated Enterprises LLC**  
**Project: 35th Avenue Superfund Site**  
**Report Number: 680-109515-3**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**

The samples were received on 1/31/2015 8:52 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.3° C and 2.1° C.

**SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) LOW LEVEL PAH**

Samples HP0320J-GS24" (680-109515-35), HP0332A-CS6" (680-109515-36), HP0332A-CS12" (680-109515-37), HP0332A-CS18" (680-109515-38), HP0332A-CS24" (680-109515-39), CV0503A-CS6" (680-109515-40), CV0503A-CS12" (680-109515-41), CV0503A-CS18" (680-109515-42), CV0503A-CS24" (680-109515-43), CV0503B-CS6" (680-109515-44), CV0503B-CS12" (680-109515-45), CV0503B-CS18" (680-109515-46), CV0503B-CS24" (680-109515-47) and CV0312A-CS6" (680-109515-48) were analyzed for Semivolatile Organic Compounds (GC/MS) Low level PAH in accordance with EPA SW846 Method 8270D. The samples were prepared on 02/02/2015 and 02/03/2015 and analyzed on 02/07/2015 and 02/10/2015.

Method(s) 8270D\_LL\_PAH: The following sample(s) was diluted due to the nature of the sample matrix: CV0312A-CS6" (680-109515-48), CV0503A-CS6" (680-109515-40), CV0503B-CS6" (680-109515-44), CV0503B-CS6" (680-109515-44 MS), CV0503B-CS6" (680-109515-44 MSD). Due this dilution, surrogate recoveries are outside control limits.

Method(s) 8270D\_LL\_PAH: Manual integration was performed on the following sample(s): CV0312A-CS6" (680-109515-48), CV0503A-CS6" (680-109515-40), CV0503B-CS6" (680-109515-44), CV0503B-CS12" (680-109515-45), CV0503A-CS12" (680-109515-41), CV0503A-CS18" (680-109515-42), CV0503A-CS24" (680-109515-43), CV0503B-CS18" (680-109515-46), CV0503B-CS24" (680-109515-47), HP0332A-CS12" (680-109515-37), HP0332A-CS18" (680-109515-38), HP0332A-CS24" (680-109515-39), HP0332A-CS6" (680-109515-36).

Method(s) 8270D\_LL\_PAH: The %RPD of the laboratory control sample (LCS) for preparation batch 369327 recovered outside control limits for the following analytes: 2 Methylanthralene

Method(s) 8270D\_LL\_PAH: The continuing calibration verification (CCV) analyzed in batch 370012 was outside the method criteria for the following analyte(s): Indeno[1,2,3-cd]pyrene and o-terphenyl. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Several analytes have recoveries outside criteria low for the MS and MSD of sample CV0503B-CS6" (680-109515-44) in batch 680-369888. Benzo[k]fluoranthene exceeded the RPD limit.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**METALS (ICP)**

Samples HP0320J-GS24" (680-109515-35), HP0332A-CS6" (680-109515-36), HP0332A-CS12" (680-109515-37), HP0332A-CS18" (680-109515-38), HP0332A-CS24" (680-109515-39), CV0503A-CS6" (680-109515-40), CV0503A-CS12" (680-109515-41), CV0503A-CS18" (680-109515-42), CV0503A-CS24" (680-109515-43), CV0503B-CS6" (680-109515-44), CV0503B-CS12" (680-109515-45), CV0503B-CS18" (680-109515-46), CV0503B-CS24" (680-109515-47) and CV0312A-CS6" (680-109515-48) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/02/2015 and analyzed on 02/04/2015 and 02/05/2015.

Method(s) 6010C: The following sample(s) was diluted due to the presence of manganese which interferes with lead: CV0503B-CS12" (680-109515-45). Elevated reporting limits (RLs) are provided.

Aluminum and Iron have recovery outside criteria low for the MS of sample CV0503B-CS6"MS (680-109515-44) in batch 680-369692. Arsenic and Lead failed the recovery criteria high.

For the MSD of sample CV0503B-CS6"MSD (680-109515-44) in batch 680-369692, Aluminum failed the recovery criteria low. Arsenic

and Iron failed the recovery criteria high. Also, Iron exceeded the RPD limit.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**PERCENT SOLIDS/MOISTURE**

Samples HP0320J-GS24" (680-109515-35), HP0332A-CS6" (680-109515-36), HP0332A-CS12" (680-109515-37), HP0332A-CS18" (680-109515-38), HP0332A-CS24" (680-109515-39), CV0503A-CS6" (680-109515-40), CV0503A-CS12" (680-109515-41), CV0503A-CS18" (680-109515-42), CV0503A-CS24" (680-109515-43), CV0503B-CS6" (680-109515-44), CV0503B-CS12" (680-109515-45), CV0503B-CS18" (680-109515-46), CV0503B-CS24" (680-109515-47) and CV0312A-CS6" (680-109515-48) were analyzed for Percent Solids/Moisture in accordance with TestAmerica SOP. The samples were analyzed on 01/31/2015 and 02/02/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**ATTACHMENT D**  
**QUALIFIED SAMPLE RESULTS**

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>HP0320J-GS24"</u>	Lab Sample ID: <u>680-109515-35</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0623.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/27/2015 14:25</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/02/2015 14:35</u>
Sample wt/vol: <u>30.27(g)</u>	Date Analyzed: <u>02/07/2015 00:19</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>22.4</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>369958</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.6	U	8.6	4.2
208-96-8	Acenaphthylene	8.6	U	8.6	4.2
120-12-7	Anthracene	8.6	U	8.6	4.2
56-55-3	Benzo[a]anthracene	8.6	U	8.6	4.2
50-32-8	Benzo[a]pyrene	8.6	U	8.6	1.5
205-99-2	Benzo[b]fluoranthene	8.6	U	8.6	4.2
191-24-2	Benzo[g,h,i]perylene	8.6	U	8.6	4.2
207-08-9	Benzo[k]fluoranthene	8.6	U	8.6	2.6
218-01-9	Chrysene	8.6	U	8.6	4.2
53-70-3	Dibenz(a,h)anthracene	8.6	U	8.6	4.2
206-44-0	Fluoranthene	8.6	U	8.6	4.2
86-73-7	Fluorene	8.6	U	8.6	4.2
193-39-5	Indeno[1,2,3-cd]pyrene	8.6	U	8.6	4.2
90-12-0	1-Methylnaphthalene	8.6	U	8.6	4.0
91-57-6	2-Methylnaphthalene	8.6	U	8.6	4.2
91-20-3	Naphthalene	8.6	U	8.6	4.2
85-01-8	Phenanthrene	8.6	U	8.6	3.1
129-00-0	Pyrene	8.6	U	8.6	4.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	90		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>HP0332A-CS6"</u>	Lab Sample ID: <u>680-109515-36</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0712.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 09:00</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.19(g)</u>	Date Analyzed: <u>02/07/2015 16:46</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>17.9</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.1	U	8.1	4.0
208-96-8	Acenaphthylene	12		8.1	4.0
120-12-7	Anthracene	23		8.1	4.0
56-55-3	Benzo[a]anthracene	160		8.1	4.0
50-32-8	Benzo[a]pyrene	170		8.1	1.5
205-99-2	Benzo[b]fluoranthene	340		8.1	4.0
191-24-2	Benzo[g,h,i]perylene	99		8.1	4.0
207-08-9	Benzo[k]fluoranthene	92		8.1	2.4
218-01-9	Chrysene	270		8.1	4.0
53-70-3	Dibenz(a,h)anthracene	45	J	8.1	4.0
206-44-0	Fluoranthene	200		8.1	4.0
86-73-7	Fluorene	8.1	U	8.1	4.0
193-39-5	Indeno[1,2,3-cd]pyrene	83	J	8.1	4.0
90-12-0	1-Methylnaphthalene	33		8.1	3.8
91-57-6	2-Methylnaphthalene	38	J	8.1	4.0
91-20-3	Naphthalene	41		8.1	4.0
85-01-8	Phenanthrene	130		8.1	2.9
129-00-0	Pyrene	250		8.1	4.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	89		36-131



FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>HP0332A-CS12"</u>	Lab Sample ID: <u>680-109515-37</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0713.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 09:05</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.16(g)</u>	Date Analyzed: <u>02/07/2015 17:09</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>16.3</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.0	U	8.0	3.9
208-96-8	Acenaphthylene	8.0	U	8.0	3.9
120-12-7	Anthracene	8.0	U	8.0	3.9
56-55-3	Benzo[a]anthracene	24		8.0	3.9
50-32-8	Benzo[a]pyrene	24		8.0	1.4
205-99-2	Benzo[b]fluoranthene	46		8.0	3.9
191-24-2	Benzo[g,h,i]perylene	19		8.0	3.9
207-08-9	Benzo[k]fluoranthene	16		8.0	2.4
218-01-9	Chrysene	46		8.0	3.9
53-70-3	Dibenz(a,h)anthracene	7.1	J	8.0	3.9
206-44-0	Fluoranthene	28		8.0	3.9
86-73-7	Fluorene	8.0	U	8.0	3.9
193-39-5	Indeno[1,2,3-cd]pyrene	13	J	8.0	3.9
90-12-0	1-Methylnaphthalene	13		8.0	3.7
91-57-6	2-Methylnaphthalene	16	J	8.0	3.9
91-20-3	Naphthalene	13		8.0	3.9
85-01-8	Phenanthrene	36		8.0	2.9
129-00-0	Pyrene	38		8.0	3.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	88		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>HP0332A-CS18"</u>	Lab Sample ID: <u>680-109515-38</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0714.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 09:10</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.15(g)</u>	Date Analyzed: <u>02/07/2015 17:31</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>17.0</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.0	U	8.0	4.0
208-96-8	Acenaphthylene	8.0	U	8.0	4.0
120-12-7	Anthracene	8.0	U	8.0	4.0
56-55-3	Benzo[a]anthracene	16		8.0	4.0
50-32-8	Benzo[a]pyrene	15		8.0	1.4
205-99-2	Benzo[b]fluoranthene	27		8.0	4.0
191-24-2	Benzo[g,h,i]perylene	12		8.0	4.0
207-08-9	Benzo[k]fluoranthene	9.1		8.0	2.4
218-01-9	Chrysene	28		8.0	4.0
53-70-3	Dibenz(a,h)anthracene	8.0	U	8.0	4.0
206-44-0	Fluoranthene	18		8.0	4.0
86-73-7	Fluorene	8.0	U	8.0	4.0
193-39-5	Indeno[1,2,3-cd]pyrene	8.5	J	8.0	4.0
90-12-0	1-Methylnaphthalene	8.0		8.0	3.7
91-57-6	2-Methylnaphthalene	8.9	J	8.0	4.0
91-20-3	Naphthalene	9.1		8.0	4.0
85-01-8	Phenanthrene	19		8.0	2.9
129-00-0	Pyrene	24		8.0	4.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	95		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>HP0332A-CS24"</u>	Lab Sample ID: <u>680-109515-39</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0715.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 09:15</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.09(g)</u>	Date Analyzed: <u>02/07/2015 17:53</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>17.5</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.1	U	8.1	4.0
208-96-8	Acenaphthylene	8.1	U	8.1	4.0
120-12-7	Anthracene	8.1	U	8.1	4.0
56-55-3	Benzo[a]anthracene	20		8.1	4.0
50-32-8	Benzo[a]pyrene	22		8.1	1.5
205-99-2	Benzo[b]fluoranthene	43		8.1	4.0
191-24-2	Benzo[g,h,i]perylene	15		8.1	4.0
207-08-9	Benzo[k]fluoranthene	15		8.1	2.4
218-01-9	Chrysene	38		8.1	4.0
53-70-3	Dibenz(a,h)anthracene	7.5	J	8.1	4.0
206-44-0	Fluoranthene	28		8.1	4.0
86-73-7	Fluorene	8.1	U	8.1	4.0
193-39-5	Indeno[1,2,3-cd]pyrene	11	J	8.1	4.0
90-12-0	1-Methylnaphthalene	7.9	J	8.1	3.7
91-57-6	2-Methylnaphthalene	9.2	<del>J</del>	8.1	4.0
91-20-3	Naphthalene	9.3		8.1	4.0
85-01-8	Phenanthrene	25		8.1	2.9
129-00-0	Pyrene	34		8.1	4.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	111		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503A-CS6"</u>	Lab Sample ID: <u>680-109515-40</u>
Matrix: <u>Solid</u>	Lab File ID: <u>1KB0717.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 10:15</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.01(g)</u>	Date Analyzed: <u>02/07/2015 15:41</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>14.4</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>369988</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	78	U	78	39
208-96-8	Acenaphthylene	100		78	39
120-12-7	Anthracene	140		78	39
56-55-3	Benzo[a]anthracene	690		78	39
50-32-8	Benzo[a]pyrene	690		78	14
205-99-2	Benzo[b]fluoranthene	1400		78	39
191-24-2	Benzo[g,h,i]perylene	490		78	39
207-08-9	Benzo[k]fluoranthene	590		78	23
218-01-9	Chrysene	900		78	39
53-70-3	Dibenz(a,h)anthracene	190		78	39
206-44-0	Fluoranthene	1200		78	39
86-73-7	Fluorene	78	U	78	39
193-39-5	Indeno[1,2,3-cd]pyrene	390		78	39
90-12-0	1-Methylnaphthalene	100		78	36
91-57-6	2-Methylnaphthalene	150	<span style="color: red;">✖ J</span>	78	39
91-20-3	Naphthalene	210		78	39
85-01-8	Phenanthrene	680		78	28
129-00-0	Pyrene	950		78	39

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	0	D	36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503A-CS12"</u>	Lab Sample ID: <u>680-109515-41</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0717.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 10:20</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.23(g)</u>	Date Analyzed: <u>02/07/2015 18:38</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>16.1</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.8		7.9	3.9
208-96-8	Acenaphthylene	25		7.9	3.9
120-12-7	Anthracene	23		7.9	3.9
56-55-3	Benzo[a]anthracene	200		7.9	3.9
50-32-8	Benzo[a]pyrene	220		7.9	1.4
205-99-2	Benzo[b]fluoranthene	370		7.9	3.9
191-24-2	Benzo[g,h,i]perylene	130		7.9	3.9
207-08-9	Benzo[k]fluoranthene	110		7.9	2.4
218-01-9	Chrysene	270		7.9	3.9
53-70-3	Dibenz(a,h)anthracene	46		7.9	3.9
206-44-0	Fluoranthene	250		7.9	3.9
86-73-7	Fluorene	9.3		7.9	3.9
193-39-5	Indeno[1,2,3-cd]pyrene	100	J	7.9	3.9
90-12-0	1-Methylnaphthalene	22		7.9	3.7
91-57-6	2-Methylnaphthalene	30	* J	7.9	3.9
91-20-3	Naphthalene	35		7.9	3.9
85-01-8	Phenanthrene	140		7.9	2.8
129-00-0	Pyrene	330		7.9	3.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	97		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503A-CS18"</u>	Lab Sample ID: <u>680-109515-42</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0718.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 10:25</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>29.99(g)</u>	Date Analyzed: <u>02/07/2015 19:00</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>16.4</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.0	U	8.0	3.9
208-96-8	Acenaphthylene	8.0	U	8.0	3.9
120-12-7	Anthracene	8.0	U	8.0	3.9
56-55-3	Benzo[a]anthracene	11		8.0	3.9
50-32-8	Benzo[a]pyrene	13		8.0	1.4
205-99-2	Benzo[b]fluoranthene	22		8.0	3.9
191-24-2	Benzo[g,h,i]perylene	8.9		8.0	3.9
207-08-9	Benzo[k]fluoranthene	8.5		8.0	2.4
218-01-9	Chrysene	17		8.0	3.9
53-70-3	Dibenz(a,h)anthracene	8.0	U	8.0	3.9
206-44-0	Fluoranthene	17		8.0	3.9
86-73-7	Fluorene	8.0	U	8.0	3.9
193-39-5	Indeno[1,2,3-cd]pyrene	6.7	<del>J</del>	8.0	3.9
90-12-0	1-Methylnaphthalene	8.0	U	8.0	3.7
91-57-6	2-Methylnaphthalene	<del>8.0</del>	<del>U</del> <del>R</del>	<del>8.0</del>	<del>3.9</del>
91-20-3	Naphthalene	8.0	U	8.0	3.9
85-01-8	Phenanthrene	12		8.0	2.9
129-00-0	Pyrene	22		8.0	3.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	116		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503A-CS24"</u>	Lab Sample ID: <u>680-109515-43</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0719.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 10:30</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.06(g)</u>	Date Analyzed: <u>02/07/2015 19:22</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>17.1</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.1	U	8.1	4.0
208-96-8	Acenaphthylene	8.1	U	8.1	4.0
120-12-7	Anthracene	8.1	U	8.1	4.0
56-55-3	Benzo[a]anthracene	15		8.1	4.0
50-32-8	Benzo[a]pyrene	16		8.1	1.4
205-99-2	Benzo[b]fluoranthene	27		8.1	4.0
191-24-2	Benzo[g,h,i]perylene	8.8		8.1	4.0
207-08-9	Benzo[k]fluoranthene	10		8.1	2.4
218-01-9	Chrysene	21		8.1	4.0
53-70-3	Dibenz(a,h)anthracene	8.1	U	8.1	4.0
206-44-0	Fluoranthene	18		8.1	4.0
86-73-7	Fluorene	8.1	U	8.1	4.0
193-39-5	Indeno[1,2,3-cd]pyrene	6.9	<del>U</del> J	8.1	4.0
90-12-0	1-Methylnaphthalene	8.1	U	8.1	3.7
91-57-6	2-Methylnaphthalene	<del>8.1</del> <del>U</del> R		<del>8.1</del>	<del>4.0</del>
91-20-3	Naphthalene	8.1	U	8.1	4.0
85-01-8	Phenanthrene	5.8	J	8.1	2.9
129-00-0	Pyrene	29		8.1	4.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	117		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503B-CS6"</u>	Lab Sample ID: <u>680-109515-44</u>
Matrix: <u>Solid</u>	Lab File ID: <u>1KB0715.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 10:50</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.18(g)</u>	Date Analyzed: <u>02/07/2015 14:55</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>17.5</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>369988</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	81	U	81	40
208-96-8	Acenaphthylene	81	U	81	40
120-12-7	Anthracene	70	J	81	40
56-55-3	Benzo[a]anthracene	940		81	40
50-32-8	Benzo[a]pyrene	1400		81	14
205-99-2	Benzo[b]fluoranthene	2700		81	40
191-24-2	Benzo[g,h,i]perylene	1300	J	81	40
207-08-9	Benzo[k]fluoranthene	850	J	81	24
218-01-9	Chrysene	1300		81	40
53-70-3	Dibenz(a,h)anthracene	530		81	40
206-44-0	Fluoranthene	910		81	40
86-73-7	Fluorene	81	U	81	40
193-39-5	Indeno[1,2,3-cd]pyrene	1100	J	81	40
90-12-0	1-Methylnaphthalene	55	J	81	37
91-57-6	2-Methylnaphthalene	75	J J J	81	40
91-20-3	Naphthalene	83		81	40
85-01-8	Phenanthrene	390		81	29
129-00-0	Pyrene	830		81	40

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	0	D	36-131



FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503B-CS12"</u>	Lab Sample ID: <u>680-109515-45</u>
Matrix: <u>Solid</u>	Lab File ID: <u>1KB1006.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 10:55</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.08(g)</u>	Date Analyzed: <u>02/10/2015 11:36</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>16.7</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370281</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.0	U	8.0	4.0
208-96-8	Acenaphthylene	8.0	U	8.0	4.0
120-12-7	Anthracene	8.0	U	8.0	4.0
56-55-3	Benzo[a]anthracene	25		8.0	4.0
50-32-8	Benzo[a]pyrene	27		8.0	1.4
205-99-2	Benzo[b]fluoranthene	47		8.0	4.0
191-24-2	Benzo[g,h,i]perylene	26		8.0	4.0
207-08-9	Benzo[k]fluoranthene	18		8.0	2.4
218-01-9	Chrysene	36		8.0	4.0
53-70-3	Dibenz(a,h)anthracene	9.2		8.0	4.0
206-44-0	Fluoranthene	41		8.0	4.0
86-73-7	Fluorene	8.0	U	8.0	4.0
193-39-5	Indeno[1,2,3-cd]pyrene	20		8.0	4.0
90-12-0	1-Methylnaphthalene	5.5	J	8.0	3.7
91-57-6	2-Methylnaphthalene	6.1	<del>J</del> J	8.0	4.0
91-20-3	Naphthalene	5.6	J	8.0	4.0
85-01-8	Phenanthrene	23		8.0	2.9
129-00-0	Pyrene	38		8.0	4.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	67		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503B-CS18"</u>	Lab Sample ID: <u>680-109515-46</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0721.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 11:00</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>29.96(g)</u>	Date Analyzed: <u>02/07/2015 20:07</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>17.8</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.2	U	8.2	4.0
208-96-8	Acenaphthylene	8.2	U	8.2	4.0
120-12-7	Anthracene	8.2	U	8.2	4.0
56-55-3	Benzo[a]anthracene	8.2	U	8.2	4.0
50-32-8	Benzo[a]pyrene	2.1	J	8.2	1.5
205-99-2	Benzo[b]fluoranthene	8.2	U	8.2	4.0
191-24-2	Benzo[g,h,i]perylene	8.2	U	8.2	4.0
207-08-9	Benzo[k]fluoranthene	8.2	U	8.2	2.4
218-01-9	Chrysene	8.2	U	8.2	4.0
53-70-3	Dibenz(a,h)anthracene	8.2	U	8.2	4.0
206-44-0	Fluoranthene	8.2	U	8.2	4.0
86-73-7	Fluorene	8.2	U	8.2	4.0
193-39-5	Indeno[1,2,3-cd]pyrene	8.2	<del>U</del> <b>UJ</b>	8.2	4.0
90-12-0	1-Methylnaphthalene	8.2	U	8.2	3.8
91-57-6	2-Methylnaphthalene	<del>8.2</del>	<del>U</del> <b>R</b>	<del>8.2</del>	<del>4.0</del>
91-20-3	Naphthalene	8.2	U	8.2	4.0
85-01-8	Phenanthrene	8.2	U	8.2	2.9
129-00-0	Pyrene	8.2	U	8.2	4.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	106		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0503B-CS24"</u>	Lab Sample ID: <u>680-109515-47</u>
Matrix: <u>Solid</u>	Lab File ID: <u>2YB0722.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 11:05</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.23(g)</u>	Date Analyzed: <u>02/07/2015 20:29</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>19.7</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>370012</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	8.3	U	8.3	4.1
208-96-8	Acenaphthylene	8.3	U	8.3	4.1
120-12-7	Anthracene	8.3	U	8.3	4.1
56-55-3	Benzo[a]anthracene	8.3	U	8.3	4.1
50-32-8	Benzo[a]pyrene	2.9	J	8.3	1.5
205-99-2	Benzo[b]fluoranthene	5.8	J	8.3	4.1
191-24-2	Benzo[g,h,i]perylene	8.3	U	8.3	4.1
207-08-9	Benzo[k]fluoranthene	8.3	U	8.3	2.5
218-01-9	Chrysene	8.3	U	8.3	4.1
53-70-3	Dibenz(a,h)anthracene	8.3	U	8.3	4.1
206-44-0	Fluoranthene	8.3	U	8.3	4.1
86-73-7	Fluorene	8.3	U	8.3	4.1
193-39-5	Indeno[1,2,3-cd]pyrene	8.3	<del>U</del> <b>UJ</b>	8.3	4.1
90-12-0	1-Methylnaphthalene	8.3	U	8.3	3.8
91-57-6	2-Methylnaphthalene	<del>8.3</del>	<del>U</del> <b>R</b>	<del>8.3</del>	<del>4.1</del>
91-20-3	Naphthalene	8.3	U	8.3	4.1
85-01-8	Phenanthrene	8.3	U	8.3	3.0
129-00-0	Pyrene	8.3	U	8.3	4.1

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	97		36-131

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Savannah</u>	Job No.: <u>680-109515-3</u>
SDG No.: <u>680-109515-03</u>	
Client Sample ID: <u>CV0312A-CS6"</u>	Lab Sample ID: <u>680-109515-48</u>
Matrix: <u>Solid</u>	Lab File ID: <u>1KB0718.D</u>
Analysis Method: <u>8270D_LL_PAH</u>	Date Collected: <u>01/28/2015 13:30</u>
Extract. Method: <u>3546</u>	Date Extracted: <u>02/03/2015 13:00</u>
Sample wt/vol: <u>30.10(g)</u>	Date Analyzed: <u>02/07/2015 16:04</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: <u>13.6</u>	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>369988</u>	Units: <u>ug/Kg</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	77	U	77	38
208-96-8	Acenaphthylene	77	U	77	38
120-12-7	Anthracene	110		77	38
56-55-3	Benzo[a]anthracene	630		77	38
50-32-8	Benzo[a]pyrene	560		77	14
205-99-2	Benzo[b]fluoranthene	1100		77	38
191-24-2	Benzo[g,h,i]perylene	410		77	38
207-08-9	Benzo[k]fluoranthene	400		77	23
218-01-9	Chrysene	800		77	38
53-70-3	Dibenz(a,h)anthracene	140		77	38
206-44-0	Fluoranthene	1200	J	77	38
86-73-7	Fluorene	77	U	77	38
193-39-5	Indeno[1,2,3-cd]pyrene	320	J	77	38
90-12-0	1-Methylnaphthalene	100		77	36
91-57-6	2-Methylnaphthalene	140	* J	77	38
91-20-3	Naphthalene	89		77	38
85-01-8	Phenanthrene	560	J	77	28
129-00-0	Pyrene	1000		77	38

CAS NO.	SURROGATE	%REC	Q	LIMITS
84-15-1	o-Terphenyl	0	D	36-131